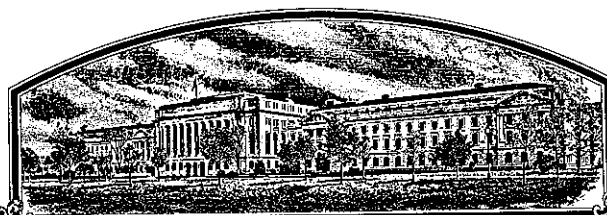


No.

8200170



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Texas Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT OF MARCH 3, 1930, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ONION

'Texas Grano 1015y'



In Testimony Whereof, I have hereunto set
my hand and caused the seal of the Plant
Variety Protection Office to be affixed
at the City of Washington
this 30th day of June in
the year of our Lord one thousand nine
hundred and eighty-three.

Attest:

Kenneth H. Egan
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

FORM APPROVED
OMB NO. 40-R3822

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY TX 204		1b. VARIETY NAME Texas Grano 1015Y		FOR OFFICIAL USE ONLY PV NUMBER 8200170	
2. KIND NAME Onion		3. GENUS AND SPECIES NAME Allium cepa L.		FILING DATE 9/7/82	TIME A.M. 8:00 PM
4. FAMILY NAME (BOTANICAL) Liliaceae		5. DATE OF DETERMINATION May 1982		FEE RECEIVED \$ 500.00 \$ 250.00	DATE 9/7/82 6/1/83
6. NAME OF APPLICANT(S) Texas Agricultural Experiment Station		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) Texas A&M University College Station, TX 77843		8. TELEPHONE AREA CODE AND NUMBER 713/845-4051 713/845-4757	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) State Experiment Station		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION Texas		11. DATE OF INCORPORATION 1876	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Foundation Seed Service The Texas Agricultural Experiment Station College Station, TX 77843					

Send Policy, Release Committee

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- ☒ 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- ☒ 13B. Exhibit B, Novelty Statement.
- ☒ 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)
- ☒ 13D. Exhibit D, Additional Description of the Variety.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a). (If "Yes," answer 14B and 14C below.) ☐ YES ☒ NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☒ NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

Protection will be filed in several countries in near future

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? ☐ YES ☒ NO (If "Yes," give name of countries and dates.)

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? ☒ YES ☐ NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

8-10-82
(DATE)

Harvey J. Walker
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

Exhibit A

Origin and Breeding History of the Variety

Texas Grano 1015Y

The onion variety, Texas Grano 1015Y, was developed from an original single bulb selection from the variety Texas Early Grano 951. The line 951 was developed jointly by the Texas Agricultural Experiment Station and the USDA in 1952 and was used as the male parent in the hybrid Yellow Granex. The variety TG 1015Y came from a group of approximately 100 selfs made from a population of TEG 951 bulbs grown in the TAES pink root screening block at Weslaco. Progenie obtained from those selfs, made in 1974, were planted each generation in the disease screening block at Weslaco for four generations. Small masses consisting of 3 to 5 bulbs which exhibited resistance to pink root disease, having desired horticultural qualities, and ability to store in an open environment for three months, were planted for seed production each year following the initial self.

TG 1015Y pedigree is TEG 951 [(S₁M₃)M] designating a single bulb selection selfed once, three small masses consisting of 3 to 5 bulbs, then a large mass increase in a 12' X 80' screen cage.

It was entered in variety and demonstration tests on TX 204. It exhibits resistance to pink root disease (Pyrenochaeta terrestris), produces high yields of uniform yellow bulbs being slightly flat globe in shape, and stores well as compared to other short day varieties.

Leonard M. Pike and Paul Leeper, professors of Horticulture, provided leadership in development of the variety. Research Associate Tom Barkley and Johnny Hobbs provided technical assistance. Onion producers and shippers grew out test plots and provided assistance in evaluations. The Texas Agricultural Experiment Station by virtue of employing the principle personnel, providing the major facilities, owning the original genetic stock and providing

8200170

major financing of the onion breeding program, is the owner of Texas Grano
1015Y.

Texas Grano 1015Y is the most uniform open pollinated short day onion variety we have observed in our program since 1972. It has remained stable for shape and color since testing as an established line. It is uniform for maturity and has shown no off type or off color bulbs in the replicated tests. There has been an occasional off color bulb in small farmer grown plots where planted with commercial planters but one or two bulbs per 1/4 acre indicates seed mixture only. Table 2 shows the comparison of Texas Grano 1015Y with three commercial Texas Early Grano 502 samples provided in 1981-82 in two 4 replication tests at Weslaco.

<u>Variety</u>	<u>Color</u>	<u>% Doubles</u>	<u>% Off types</u>	<u>Remarks</u>
Texas Grano 1015Y	Yellow	0.0	0.0	V. Uniform
Texas Early Grano 502	Yellow	3.1	0.0	Pink root susc.
Texas Early Grano 502	Yellow	2.0	0.0	Nice grano
Texas Early Grano 502	Yellow	15.6	0.0	Pink root susc.

Texas Grano 1015Y is a yellow shortday onion variety developed through inbreeding out of Texas Grano 951. Texas Grano 951 had originally been developed and released by the Texas Agricultural Experiment Station as the pollinator to make the F_1 hybrid, Yellow Granex.

Texas Grano 1015Y is most similar to the variety Texas Early Grano 502 and should be compared to that variety. The differences are distinct however, as its maturity is approximately one week later, its shape is a flattened globe as compared to top shape for Texas Early Grano 502, and it exhibits more resistance to pinkroot disease.

With reference to bulb characteristics, Texas Grano 1015Y is as mentioned, a flattened globe with a shape index of .9 while Texas Early Grano 502 being top shaped has a shape index of greater than 1. Other varieties which might be classified as similar include Ringer and Colossal, and a hybrid Henry's Special. However, Ringer and Colossal are top shaped to oblong.

With reference to leaf scale appearance, Texas Grano 1015Y is similar to Texas Grano 502. However, when compared to complete rings of scales Texas Grano 1015Y has more single centers than Texas Early Grano 502 making it much more desirable for fresh market or processing.

With reference to disease resistance, Texas Grano 1015Y exhibits more resistance to pink root disease than any variety we have tested at the Texas A&M Research Center at Weslaco. We have obtained bulbs 6 inches in diameter weighing 2 pounds each when grown in the pink root screening plot.

Table 1 summarizes the novelty of Texas Grano 1015Y in comparison to the most similar shortday varieties of onions.

Table 1. A comparison of Texas Grano 1015Y with most similar shortday onion varieties.

<u>Variety</u>	<u>Maturity</u>	<u>Bulb Shape</u>	<u>Leaf Scale</u>	<u>Pink root Resistance</u>
Texas Grano 1015Y	April 20	Flattened Globe	Dull yellow	Excellent
Ringer	April 15	Top shape	Dull yellow	Good
TEG 502	April 15	Top shape	Dull yellow	Good
Colossal	April 15	Oblong	Dull yellow	Good

The most unique differences of much importance for Texas Grano 1015Y is maturity date, large bulb size which can be obtained when grown on pink root infected land, and improved shipping and storage quality. Its maturity is important to extend production of shortday onions to provide a more orderly flow of fresh market onions to the consumer. Please refer to TAES MP 1514 for reasons for development of this variety and others which provide a means of improving an orderly flow of fresh onions to the market.

UNITED STATES DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Onions)

OBJECTIVE DESCRIPTION OF VARIETY

ONIONS (ALLIUM CEPA L.)

REFERENCES: See Reverse.

NAME OF APPLICANT(S)

FOR OFFICIAL USE ONLY

PVPO NUMBER

8200170

VARIETY NAME OR TEMPORARY
DESIGNATION

Texas Grano 1015Y

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less.

1. TYPE:

1 = BULB 2 = BUNCHING

1 = SHORT DAY 2 = LONG DAY

TO DEGREES MEAN LATITUDE - ADAPTATION RANGE

Maturity (days): 1 = EARLY (75 - 90) 2 = MEDIUM (100 - 120) 3 = LATE (> 130)

2. PLANT

CM. HEIGHT ABOVE SOIL LINE TO HIGHEST POINT OF ANY FOLIAGE

CM. TALLER THAN TEG 502 (Comparable variety)CM. SHORTER THAN Ben Shemen (Comparable variety)

1 = ERECT (Spartan Gem) 2 = INTERMEDIATE 3 = FLOPPY (Epoch)

3. LEAF:

CM. LONG (before maturity yellowing begins)

MM. WIDE MM. THICK AT MIDLENGTH OF LONGEST LEAFColor: 1 = LIGHT GREEN (Early Grano) 2 = MEDIUM GREEN (Yellow Bermuda)
3 = BLUE GREEN (Australian Brown U.C. No. 1)

Bloom: 1 = NONE - glossy 2 = LIGHT (Early Grano) 3 = MEDIUM (Crystal Wax) 4 = HEAVY (California Early Red)

4. SHEATH:

MM. COLUMN LENGTH (Height from soil line to base of lowest succulent leaf)

MM. DIAMETER AT MIDLENGTH

Scape: CM. FROM SOIL LINE TO BASE OF INFLORESCENCE

Scape: MM. DIAMETER AT MIDLENGTH

5. INFLORESCENCE:

Umbel (for seed production)

MAXIMUM NO. PER PLANT

MINIMUM NO. PER PLANT

AVERAGE NO. PER PLANT

MM. DIAMETER

1. COMPACT 2 = LOOSE/OPEN 3 = SHAGGY

Spathe: 1 = LONG BEAK 2 = SHORT BEAK

Flower Color: 1 = WHITE 2 = GREEN 3 = BRIGHT GREEN

MM. ANTHER LENGTH

Anther Color: 1 = LIGHT GREEN 2 = DARK GREEN 3 = YELLOW 4 = PALE YELLOW 5 = CHOCOLATE 6 = RED

Pollen Viability: 1 = STERILE 2 = FERTILE

Sepal Shape: 1 = LONG POINTED 2 = ROUND SHORT

6. BULB:

AVERAGE NUMBER BULBS PER METER

Size (Harvest): 1 = SMALL (Red Creole) 2 = MEDIUM (Australian Brown U.C. No. 1) 3 = LARGE (Early Grano)

Shape (see attached chart): 1 = GLOBE (White Sweet Spanish) 2 = DEEP GLOBE (Abundance)
 3 = FLT. GLOBE (Australian Brn. U.C. No. 1) 4 = TOP SHAPE (Texas Grano 502)
 5 = DEEP FLAT (Granex) 6 = THICK FLAT (Ebenezer)
 7 = FLAT (Crystal Wax) 8 = TORPEDO-LONG OVAL (Italian Red)

CM. HEIGHT ÷ CM. DIAMETER = .9 SHAPE INDEX

1 = INVAGINATE 2 = EVAGINATE

Color (Skin): 01 = BROWN (Australian Brn. U.C. No. 1) 02 = PURPLISH RED (Italian Red)
 03 = BUFF RED (Red Creole) 04 = PINKISH YELLOW (Ebenezer)
 05 = BROWNISH YELLOW (Mt. Danvers) 06 = DEEP YELLOW (Brigham Yellow Globe)
 07 = MEDIUM YELLOW (Early Yellow Globe) 08 = PALE YELLOW (Yellow Bermuda)
 09 = WHITE (White Sweet Spanish) 10 = OTHER (Specify) _____

Color (Interior): 1 = PINK 2 = RED 3 = PURPLISH-RED 4 = WHITE
 5 = CREAM 6 = LIGHT GREEN-YELLOW 7 = DARK GREEN-YELLOW

Scales: 1 = FEW (Crystal Wax) 2 = MEDIUM (Australian Brown U.C. No. 1) 3 = MANY (Sweet Spanish)

Scales: 1 = THICK (Australian Brown U.C. No. 1) 2 = MEDIUM (Red Creole) 3 = THIN (Crystal Wax)

Scale Retention: 1 = VERY GOOD (Australian Brn. U.S. No. 1) 2 = GOOD (Ebenezer)
 3 = FAIR (Red Wethersfield) 4 = POOR (Crystal Wax)

Pungence: 1 = MILD (Early Grano) 2 = MEDIUM (Crystal Wax) 3 = STRONG (White Creole)

Storage: 1 = GOOD (Ebenezer) 2 = FAIR (Yellow Globe Danvers) 3 = POOR (Crystal Wax)

7. DISEASE RESISTANCE (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BLACK MOLD NECK ROT PURPLE BLOTCH SMUT
 MILDEW PINK ROOT SMUDGE YELLOW DWARF

8. INSECT RESISTANCE: (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

THRIP OTHER (Specify) _____

9. INDICATE A VARIETY THAT MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Leaf Height	TEG 502	Flower Ball	TEG 502
Leaf Color	Between 502 & Ben Shemen	Bulb Color	TEG 502
Leaf Bloom/Wax	TEG 502	Bulb Size	TEG 502
Flower Stalk	TEG 502	Bulb Shape	Sweet Spanish
Maturity at same Locantio	Slightly later than TEG 502		

REFERENCES

Jones, H. A. and Mann, L. K. 1963 — Onions and Their Allies, Interscience Publishers, Inc., New York

USDA Misc. Pub. No. 435, 1941 — Descriptions of Types of Principal American Varieties of Onions

Hayward, H. E., 1938 — The Structure of Economic Plants, McMillan, New York (Reprint 1967)

Ag Research, 7 (8):8 — Feb. 1959 — Branding Onion Outcasts

Salem, I. A. 1966 — Inheritance of Onion Bulb Shape, Iowa St. University — PhD thesis

Additional Description of the Variety

Texas Grano 1015Y

Texas Grano 1015Y is a variety developed to replace TEG 502.

The objective established to improve the TEG 502 included improved pink root resistance, better handling and shipping quality, higher percentage of marketable bulbs including purity of color, uniform shape, and higher percentage of single centers. Each objective was accomplished in addition to improving the shape from top shape to a flat globe which allows for less waste in use for onion rings or other forms of processing.

The yield potential is significantly higher than TEG 502 based on two important factors. The first is dependent on the prevalence of pink root disease. Where pink root is present, TG 1015Y has consistently out yielded TEG 502 by as much as 100%. Where the disease was not severe, yields based on total weight were similar. The second factor which has been important in determining the higher yields of TG 1015Y, has been its uniformity of bulb color and high percentage of single centers. In comparison, TEG 502 has had a high percentage of double and off colored bulbs such as white and pink.

The variety was selected from several sister breeding lines by breeders Leonard Pike, Paul Leeper, and numerous onion growers in Texas. It is unique in its slightly flat globe shape and can easily be distinguished from TEG 502 and other short day onion varieties.

Maturity date and storage quality are presented in Tables 1 and 2.

TABLE 1. A COMPARISON OF DATES OF MATURITY OF TEXAS GRANO 502 AND FIVE NEW TAES VARIETIES.

<u>VARIETY</u>	<u>Maturity</u>							
	<u>April</u>				<u>May</u>			
	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>
Texas Grano 502	X							
Texas Grano 1015Y	X							
Texas Grano 1025Y				X				
Texas Grano 1030Y						X		
Texas Grano 1105Y							X	

TABLE 2. A COMPARISON OF THE STORAGE - SHIPPING QUALITY OF COMMERCIAL ONION VARIETIES GROWN IN TEXAS TO THE NEW VARIETIES

<u>VARIETY</u>	<u>Storage-Shipping Quality</u>						
	<u>Weeks in Storage</u>						
	<u>2-3</u>	<u>3-4</u>	<u>4-5</u>	<u>5-6</u>	<u>6-7</u>	<u>7-8</u>	
Granex	X						
Y33	X						
TE Grano 502			X				
Ringer			X				
New Mexico Yellow Grano	X						
Texas Grano 1015Y				X			
Texas Grano 1025Y					X		
Texas Grano 1030Y						X	
Texas Grano 1105Y					X		